

What is claimed is:

1. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

a frame comprising an array of slots, each slot containing one of the circuit cards; and

a cam selectively engageable with the frame for clamping the circuit cards within the frame.

2. The receptacle of claim 1, wherein the frame is partitioned into first and second sub-frames by a first partition and each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions.

3. The receptacle of claim 2, wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle.

4. The receptacle of claim 3, wherein the first partition is in slidable contact with the receptacle.

5. The receptacle of claim 4, wherein the cam is engageable with the first sub-frame for sliding the first sub-frame so that circuit cards that are in the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

6. The receptacle of claim 1, wherein the cam is selected from the group consisting of a pair of cams in tandem, a pair of cams, and two tandem pairs of cams.

7. The receptacle of claim 1, wherein the cam is disposed within the receptacle.

8. The receptacle of claim 1, wherein the cam is rotatably attached to the receptacle.

9. The receptacle of claim 1, wherein the cam is disposed on a shaft that rotates the cam into and out of engagement with the frame.

10. The receptacle of claim 1, wherein the cam comprises a curved surface comprising serrations.

11. The receptacle of claim 1, wherein the frame comprises a pair of frames, the cam attached to one of the pair of frames and selectively engageable with the other of the pair of frames for clamping the circuit cards within each of the pair of frames.

12. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

at least one frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards; and

at least one cam selectively engageable with the first sub-frame to clamp the circuit cards within the at least one frame.

13. The receptacle of claim 12, wherein the at least one cam is selected from the group consisting of a pair of cams in tandem, a pair of cams, and two tandem pairs of cams.

14. The receptacle of claim 12, wherein the at least one cam is disposed within the receptacle.

15. The receptacle of claim 12, wherein the at least one cam is rotatably attached to the receptacle.

16. The receptacle of claim 12, wherein the at least one cam is disposed on a shaft that rotates the at least one cam into and out of engagement with the first sub-frame.

17. The receptacle of claim 12, wherein the at least one cam comprises a curved surface comprising serrations.

18. The receptacle of claim 12, wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle.

19. The receptacle of claim 18, wherein the first partition is in slidable contact with the receptacle.

20. The receptacle of claim 19, wherein the at least one cam is engageable with the first sub-frame for sliding the first sub-frame so that circuit cards that are in the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

21. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

at least one frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle;

wherein the first partition is in slidable contact with the receptacle; and

at least one cam disposed within the receptacle and rotatably attached to the receptacle, the at least one cam selectively rotatable for selectively engaging the first sub-frame for sliding the first sub-frame so that circuit cards of the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

22. The receptacle of claim 21, wherein the at least one cam is selected from the group consisting of a pair of cams in tandem, a pair of cams, and two tandem pairs of cams.

23. The receptacle of claim 21, wherein the at least one cam is disposed on a shaft that rotates the at least one cam into and out of engagement with the first sub-frame.

24. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards; and

at least one cam disposed between the first and second frames, the at least one cam rotatably attached to the first frame and adapted to engage the second frame to exert a force on each of the first and second frames for clamping the circuit cards within the first and second frames.

25. The receptacle of claim 24, wherein the at least one cam is selected from the group consisting of a pair of cams in tandem, a pair of cams, and two tandem pairs of cams.

26. The receptacle of claim 24, wherein the at least one cam is disposed on a shaft that is rotatably attached to the first frame, the shaft rotating the at least one cam into and out of engagement with the second frame.

27. The receptacle of claim 24, wherein the at least one cam comprises a curved surface comprising serrations.

28. The receptacle of claim 24, wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle.

29. The receptacle of claim 28, wherein the first partition of each of the first and second frames is in slidable contact with the receptacle.

30. The receptacle of claim 29, wherein the force exerted on the first and second frames slides the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and slides the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

31. The receptacle of claim 24, wherein the receptacle is thermally coupled to the housing.

32. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle;

wherein the first partition of each of the first and second frames is in slidable contact with the receptacle; and

at least one cam disposed between the first and second frames, the at least one cam rotatably attached to the first sub-frame of the first frame and is selectively rotatable for to engaging the first sub-frame of the second frame to exert a force on the first sub-frame of each of the first and second frames to slide the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and to slide the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

33. The receptacle of claim 32, wherein the at least one cam is selected from the group consisting of a pair of cams in tandem, a pair of cams, and two tandem pairs of cams.

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34. The receptacle of claim 32, wherein the at least one cam is disposed on a shaft that is rotatably attached to the first sub-frame of the first frame, the shaft rotating the at least one cam into and out of engagement with the first sub-frame of the second frame.

35. The receptacle of claim 32, wherein the receptacle is thermally coupled to the housing.

36. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

a frame comprising an array of slots, each slot containing one of the circuit cards;

a shaft rotatably attached to the receptacle, the shaft having a head at one end and a nut at an end of the shaft opposite the head; and

at least one resilient element disposed on the shaft between the head and the nut, the at least one resilient element axially compressible between the head and nut to bulge generally perpendicularly to the axial direction into engagement with the first frame for clamping the circuit cards within the frame.

37. The receptacle of claim 36, wherein the frame is partitioned into first and second sub-frames by a first partition and each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions.

38. The receptacle of claim 37, wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle.



39. The receptacle of claim 38, wherein the first partition is in slidable contact with the receptacle.

40. The receptacle of claim 36, wherein the at least one resilient element bulges generally perpendicularly to the axial direction into engagement with the first sub-frame for sliding the first sub-frame so that circuit cards that are in the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

41. The receptacle of claim 36, wherein the frame comprises a pair of frames, the shaft rotatably attached to one of the pair of frames and the at least one resilient element bulges generally perpendicularly to the axial direction into engagement with the other of the pair of frames for clamping the circuit cards within each of the pair of frames.

42. The receptacle of claim 36, wherein the at least one resilient element is a pair of resilient elements.

43. The receptacle of claim 42, and further comprising a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve, the sleeve located between the respective resilient elements of the pair of resilient elements.

44. The receptacle of claim 36, wherein the shaft is in threaded engagement with the nut.

45. The receptacle of claim 36, wherein the nut is attached to the receptacle.

46. The receptacle of claim 44, wherein the shaft threads into the nut to axially compress the at least one resilient element.

47. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

at least one frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

a shaft rotatably attached to the receptacle, the shaft having a head at one end and a nut at an end of the shaft opposite the head; and

at least one resilient element disposed on the shaft between the head and the nut, the at least one resilient element axially compressible between the head and nut to bulge generally perpendicularly to the axial direction into engagement with the first sub-frame for clamping the circuit cards within the at least one frame.

48. The receptacle of claim 47, wherein the at least one resilient element is a pair of resilient elements.

49. The receptacle of claim 48, and further comprising a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the

bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve, the sleeve located between the respective resilient elements of the pair of resilient elements.

50. The receptacle of claim 47, wherein the shaft is in threaded engagement with the nut.

51. The receptacle of claim 47, wherein the nut is attached to the receptacle.

52. The receptacle of claim 50, wherein the shaft threads into the nut to axially compress the at least one resilient element.

53. The receptacle of claim 47, wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle.

54. The receptacle of claim 53, wherein the first partition is in slidable contact with the receptacle.

55. The receptacle of claim 54, wherein the at least one resilient element bulges generally perpendicularly to the axial direction into engagement with the first sub-frame for sliding the first sub-frame so that circuit cards of the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

56. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

at least one frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

a shaft having a head at one end;

a nut attached to the receptacle and in threaded engagement with the shaft adjacent an end of the shaft opposite the head;

a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve; and

first and second resilient elements disposed on the shaft respectively on either side of the sleeve and between the head and the nut;

the first resilient element axially compressible between the head and the sleeve and the second resilient element axially compressible between the sleeve and the nut to respectively bulge generally perpendicularly to the axial direction into engagement with the first sub-frame for clamping the circuit cards within the at least one frame.

57. The receptacle of claim 56, wherein the shaft threads into the nut to axially compress the first resilient element between the head and the sleeve and the second resilient element between the sleeve and the nut.

58. The receptacle of claim 56, wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle.

59. The receptacle of claim 58, wherein the first partition is in slidable contact with the receptacle.

60. The receptacle of claim 59, wherein each of the first and second resilient elements bulges generally perpendicularly to the axial direction into engagement with the first sub-frame for sliding the first sub-frame so that circuit cards of the first sub-frame contact the first partition and sliding the first partition into contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

61. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

at least one frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

wherein the first sub-frame is movable relative to the second sub-frame and is in slidable contact with the receptacle;

wherein the first partition is in slidable contact with the receptacle;

a shaft rotatably attached to the receptacle, the shaft having a head at one end and a nut at an end of the shaft opposite the head; and

at least one resilient element disposed on the shaft between the head and the nut, the at least one resilient element axially compressible between the head and nut to bulge generally perpendicularly to the axial direction for selectively engaging the first sub-frame for sliding the first sub-frame so that circuit cards of the first sub-frame contact the first partition and sliding the first partition into

contact with the circuit cards of the second sub-frame to clamp the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame.

62. The receptacle of claim 61, wherein the at least one resilient element is a pair of resilient elements.

63. The receptacle of claim 62, and further comprising a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve, the sleeve located between the respective resilient elements of the pair of resilient elements.

64. The receptacle of claim 61, wherein the shaft is in threaded engagement with the nut.

65. The receptacle of claim 61, wherein the nut is attached to the receptacle.

66. The receptacle of claim 64, wherein the shaft threads into the nut to axially compress the at least one resilient element.

67. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second

sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards; and

a shaft disposed between the first and second frames and rotatably attached to the first frame, the shaft having a head at one end and a nut at an end of the shaft opposite the head; and

at least one resilient element disposed on the shaft between the head and the nut, the at least one resilient element axially compressible between the head and nut to bulge generally perpendicularly to the axial direction into engagement with the first sub-frame of the second frame to exert a force on the first sub-frames of each of the first and second frames for clamping the circuit cards within the first and second frames.

68. The receptacle of claim 67, wherein the at least one resilient element is a pair of resilient elements.

69. The receptacle of claim 68, and further comprising a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve, the sleeve located between the respective resilient elements of the pair of resilient elements.

70. The receptacle of claim 67, wherein the shaft is in threaded engagement with the nut.

71. The receptacle of claim 67, wherein the nut is attached to the receptacle.

72. The receptacle of claim 70, wherein the shaft threads into the nut to axially compress the at least one resilient element.

73. The receptacle of claim 67, wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle.

74. The receptacle of claim 73, wherein the first partition of each of the first and second frames is in slidable contact with the receptacle.

75. The receptacle of claim 74, wherein the force exerted on the first sub-frames of each of the first and second frames slides the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and slides the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

76. The receptacle of claim 67, wherein the receptacle is thermally coupled to the housing.

77. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:



first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

a shaft having a head at one end;

a nut disposed between the first and second frames, the nut attached to the first frame and in threaded engagement with the shaft adjacent an end of the shaft opposite the head;

a sleeve disposed within a bracket, the bracket disposed between the first and second frames and attached to the first frame, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve; and

first and second resilient elements disposed on the shaft respectively on either side of the sleeve and between the head and the nut;

the first resilient element axially compressible between the head and the sleeve and the second resilient element axially compressible between the sleeve and the nut to respectively bulge generally perpendicularly to the axial direction into engagement with the first sub-frame of the second frame to exert a force on the first sub-frames of each of the first and second frames for clamping the circuit cards within the first and second frames.

78. The receptacle of claim 77, wherein the shaft threads into the nut to axially compress the first resilient element between the head and the sleeve and the second resilient element between the sleeve and the nut.

79. The receptacle of claim 77, wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle.

80. The receptacle of claim 79, wherein the first partition of each of the first and second frames is in slidable contact with the receptacle.

81. The receptacle of claim 80, wherein the force exerted on the first sub-frame of each of the first and second frames slides the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and slides the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

82. The receptacle of claim 77, wherein the receptacle is thermally coupled to the housing.

83. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle;

wherein the first partition of each of the first and second frames is in slidable contact with the receptacle;

a shaft disposed between the first and second frames and rotatably attached to the first frame, the shaft having a head at one end and a nut at an end of the shaft opposite the head; and

at least one resilient element disposed on the shaft between the head and the nut, the at least one resilient element axially compressible between the head and nut to bulge generally perpendicularly to the axial direction to engage the first sub-frame of the second frame to exert a force on the first sub-frame of each of the first and second frames to slide the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and to slide the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

84. The receptacle of claim 83, wherein the at least one resilient element is a pair of resilient elements.

85. The receptacle of claim 84, and further comprising a sleeve disposed within a bracket attached to the receptacle, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve, the sleeve located between the respective resilient elements of the pair of resilient elements.

86. The receptacle of claim 83, wherein the shaft is in threaded engagement with the nut.

87. The receptacle of claim 83, wherein the nut is attached to the receptacle.

88. The receptacle of claim 86, wherein the shaft threads into the nut to axially compress the at least one resilient element.

89. The receptacle of claim 83, wherein the receptacle is thermally coupled to the housing.

90. A receptacle for confining circuit cards to different locations within a housing, the receptacle comprising:

first and second frames, each of the first and second frames partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

wherein the first sub-frame of each of the first and second frames is movable relative to the second sub-frame of each of the first and second frames and is in slidable contact with the receptacle;

wherein the first partition of each of the first and second frames is in slidable contact with the receptacle;

a shaft having a head at one end;

a nut disposed between the first and second frames, the nut attached to the first frame and in threaded engagement with the shaft adjacent an end of the shaft opposite the head;

a sleeve disposed within a bracket, the bracket disposed between the first and second frames and attached to the first frame, the sleeve in slidable contact with the bracket, the shaft passing through the sleeve such that the shaft is rotatable within the sleeve; and

first and second resilient elements disposed on the shaft respectively on either side of the sleeve and between the head and the nut;

the first resilient element axially compressible between the head and the sleeve and the second resilient element axially compressible between the sleeve and the nut to respectively bulge generally perpendicularly to the axial direction into engagement with the first sub-frame of the second frame to exert a force on the first sub-frame of each of the first and second frames to slide the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames and to slide the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames to clamp the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames.

91. The receptacle of claim 90, wherein the shaft threads into the nut to axially compress the first resilient element between the head and the sleeve and the second resilient element between the sleeve and the nut.

92. The receptacle of claim 90, wherein the receptacle is thermally coupled to the housing.

93. A method for clamping a plurality of circuit cards within a receptacle, the method comprising:

attaching at least one cam rotatably to the receptacle;

rotating selectively the at least one cam to engage a frame within the receptacle, the frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

exerting a force on the first sub-frame using the at least one cam;

sliding the first sub-frame using the force exerted on the first sub-frame so that circuit cards of the first sub-frame contact the first partition;

exerting a force on the first partition using the circuit cards of the first sub-frame;

sliding the first partition into contact with the circuit cards of the second sub-frame using the force exerted on the first partition by the circuit cards of the first sub-frame; and

securing the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained in the slots of the second sub-frame between the first partition and the second sub-frame by maintaining the force on the first sub-frame using the at least one cam.

94. The method of claim 93, wherein attaching the at least one cam rotatably includes selecting the at least one cam from the group consisting of a pair of cams, a tandem pair of cams, and two tandem pairs of cams.

95. A method for clamping a plurality of circuit cards within a receptacle having first and second frames, each frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards, the method comprising:

disposing at least one cam between the first and second frames;

attaching the at least one cam rotatably to the first sub-frame of the first frame;

rotating selectively the at least one cam to engage the first sub-frame of the second frame;

exerting a force on the first sub-frame of each of the first and second frames using the at least one cam;

sliding the first sub-frame of each of the first and second frames using the force exerted on the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames;

exerting a force on the first partition of each of the first and second frames using the circuit cards of the first sub-frame of each of the first and second frames;

sliding the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames using the force exerted on the first partition of each of the first and second frames by the circuit cards of the first sub-frame of each of the first and second frames; and

securing the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between

the first partition and the second sub-frame of each of the first and second frames by maintaining the force on the first sub-frame of each of the first and second frames using the at least one cam.

96. The method of claim 95, wherein attaching the at least one cam rotatably includes selecting the at least one cam from the group consisting of a pair of cams, a tandem pair of cams, or two tandem pairs of cams.

97. A method for clamping a plurality of circuit cards within a receptacle, the method comprising:

compressing axially at least one resilient element between a head of a shaft and a nut disposed on the shaft so that the at least one resilient element bulges generally perpendicularly to the axial direction and into engagement with a frame within the receptacle, the frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards;

exerting a force on the first sub-frame using the at least one resilient element;

sliding the first sub-frame using the force exerted on the first sub-frame so that circuit cards of the first sub-frame contact the first partition;

exerting a force on the first partition using the circuit cards of the first sub-frame;

sliding the first partition into contact with the circuit cards of the second sub-frame using the force exerted on the first partition by the circuit cards of the first sub-frame; and

securing the circuit cards contained in the slots of the first sub-frame between the first sub-frame and the first partition and the circuit cards contained



in the slots of the second sub-frame between the first partition and the second sub-frame by maintaining the force on the first sub-frame using the at least one resilient element.

98. The method of claim 97, and further comprising attaching rotatably the shaft to the receptacle.

99. The method of claim 97, wherein compressing axially at least one resilient element comprises compressing axially a pair of resilient elements between the head of the shaft and the nut.

100. The method of claim 99, wherein compressing axially a pair of resilient elements between the head of the shaft and the nut comprises compressing one of the resilient elements between the head and a sleeve and compressing the other resilient element between the sleeve and the nut.

101. The method of claim 97, wherein compressing axially at least one resilient element comprises threading the shaft into the nut.

102. The method of claim 98, wherein attaching rotatably the shaft to the receptacle comprises attaching the nut to the receptacle.

103. A method for clamping a plurality of circuit cards within a receptacle having first and second frames, each frame partitioned into first and second sub-frames by a first partition, each of the first and second sub-frames partitioned into an array of slots by a plurality of second partitions, each slot containing one of the circuit cards, the method comprising:

attaching a shaft rotatably to the first sub-frame of the first frame between the first sub-frames of the first and second frames by disposing the shaft within a nut attached to the first sub-frame of the first frame;

compressing axially at least one resilient element between a head of the shaft and the nut so that the at least one resilient element bulges generally perpendicularly to the axial direction and into engagement with the first sub-frame of the second frame;

exerting a force on the first sub-frame of each of the first and second frames using the at least one resilient element;

sliding the first sub-frame of each of the first and second frames using the force exerted on the first sub-frame of each of the first and second frames so that circuit cards of the first sub-frame of each of the first and second frames contact the first partition of each of the first and second frames;

exerting a force on the first partition of each of the first and second frames using the circuit cards of the first sub-frame of each of the first and second frames;

sliding the first partition of each of the first and second frames into contact with the circuit cards of the second sub-frame of each of the first and second frames using the force exerted on the first partition of each of the first and second frames by the circuit cards of the first sub-frame of each of the first and second frames; and

securing the circuit cards contained in the slots of the first sub-frame of each of the first and second frames between the first sub-frame and the first partition of each of the first and second frames and the circuit cards contained in the slots of the second sub-frame of each of the first and second frames between the first partition and the second sub-frame of each of the first and second frames by maintaining the force on the first sub-frame of each of the first and second frames using the at least one resilient element.

104. The method of claim 103, wherein compressing axially at least one resilient element comprises compressing axially a pair of resilient elements between the head of the shaft and the nut.

105. The method of claim 104, wherein compressing axially a pair of resilient elements between the head of the shaft and the nut comprises compressing one of the resilient elements between the head and a sleeve and compressing the other resilient element between the sleeve and the nut.

106. The method of claim 103, wherein compressing axially at least one resilient element comprises threading the shaft into the nut.